


3.7 FUNGI



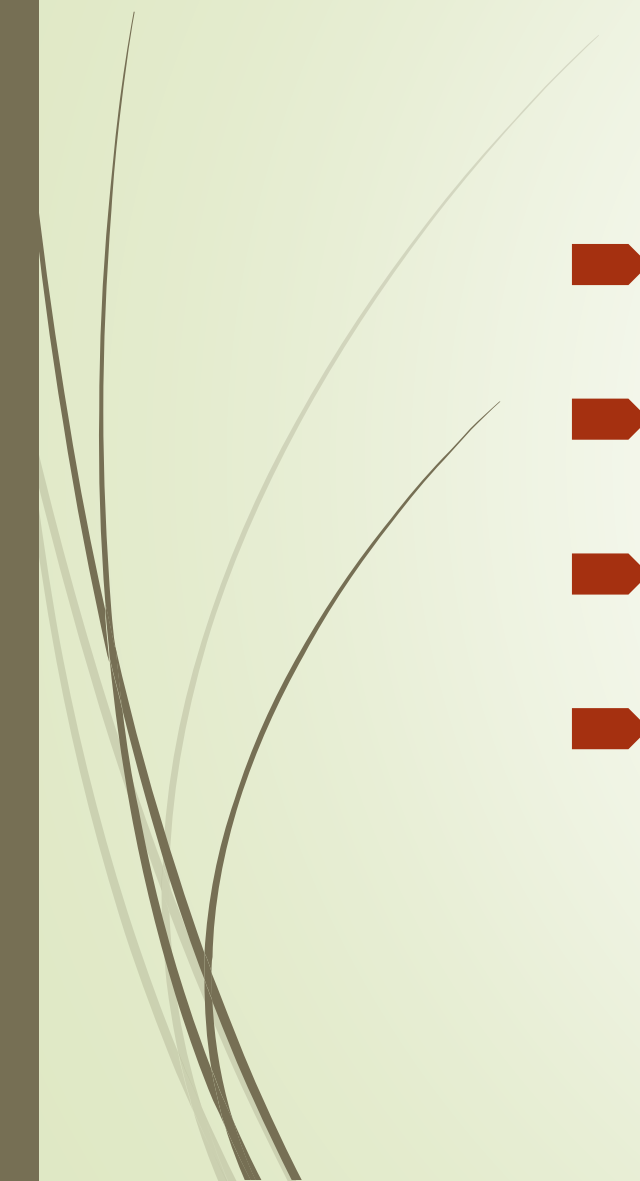
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- Once members of the plant kingdom
 - Similar to plants but took a different evolutionary pathway → heterotrophic!!!!
 - More specifically saprophytes
 - Saprophytes – organisms that obtain nutrients from dead or nonliving organic matter

Importance

1. ecosystems as decomposers (and Eubacteria)
2. yeast make bread wine and beer
3. *penicillium* produces an antibiotic
4. food: mushrooms, truffles



General Characteristics

- Unicellular or multicellular
 - Sexual or asexual
 - Most grow in the ground
 - Have cell walls (chitin)
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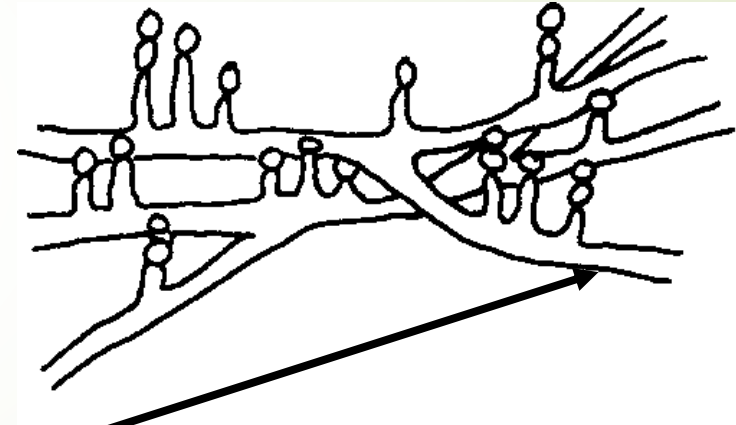
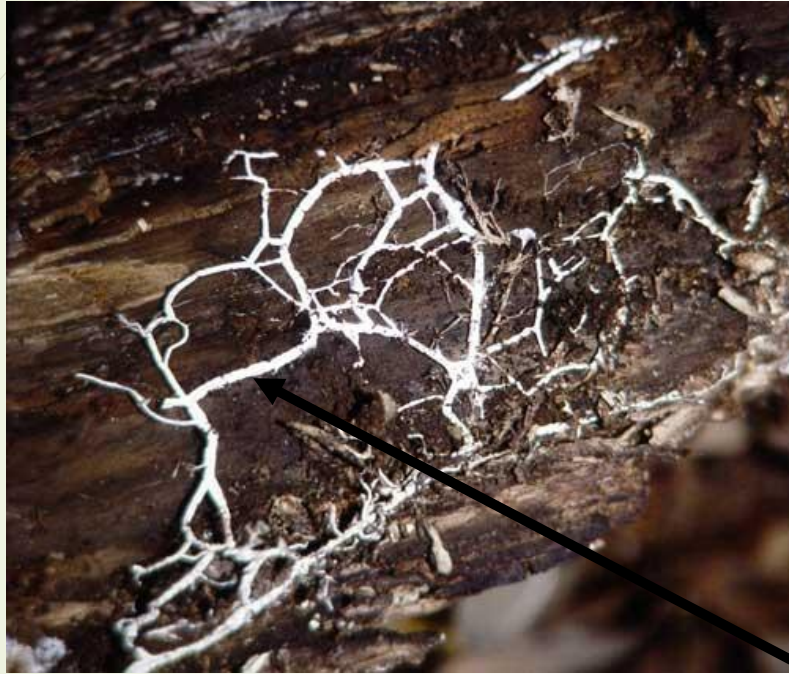
ADAPTED FOR 2 MAIN FUNCTIONS

1) Absorption of nutrients

- Digestion is extracellular (external before absorbed) release digestive enzymes
- In multicellular → absorption takes place in the mycelium

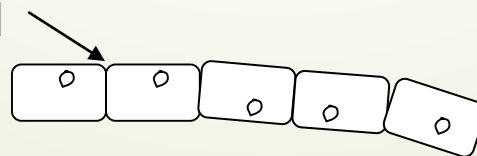


Mycelium (plural: mycelia) → a mesh of microscopic branching filaments that are usually on or below the surface



Each filament is called a hypha (plural: hyphae)

Some fungi have hyphae that are divided into cells by walls
Called septa



2) Reproduction

Often only the visible structures are its reproductive structures. They have a wide variety of sizes, shapes and colours.

1) Fragmentation and budding (asexual)

- many pieces of parent break off and grow make many new organisms
- similar to binary fission except a small piece breaks off to make a new organism

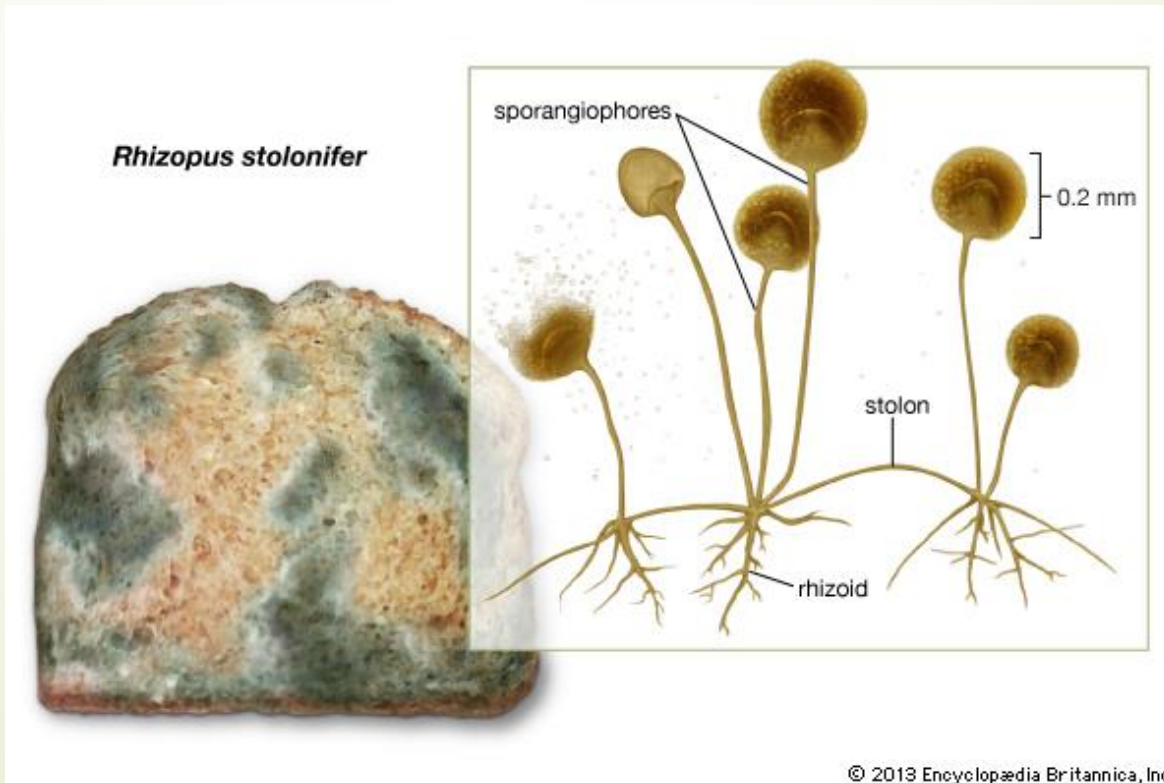
2) Spores (land dwelling) → similar to seeds in plants

- Sexual → spores are produced by meiosis
- Asexual → spores produced by mitosis

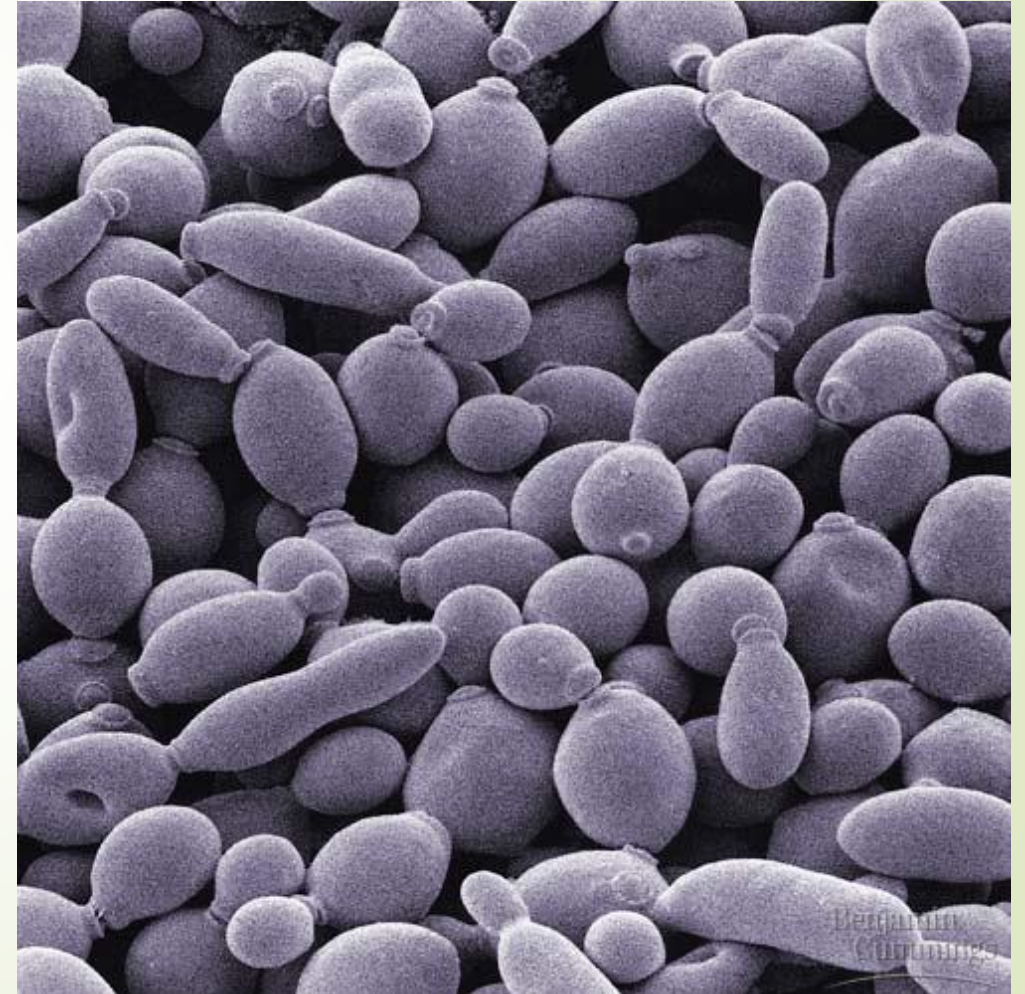
Classification

By reproductive structures

1) Zygomycetes – common mould (bread and dung mold)



2) sac fungi - includes yeast and truffles



3) Imperfect – parasitic fungi, athlete's foot and yeast infections



4) Club – classic salad mushroom





Importance of Fungi

- Fungi are vital to other organisms and to the proper functioning of ecosystems through their role as **decomposers**.
- Fungi and Eubacteria, transform complex organic substances into raw materials that other fungi and plants use for growth and development.

Importance of Fungi (Yeast)

- ▶ yeast perform cellular respiration and produced alcohol and carbon dioxide as products
- ▶ the carbon dioxide causes the bread to rise and the alcohol evaporates in the oven
- ▶ yeast is also used for beer and wine and the carbon dioxide produced gives the beer its bubbles....the alcohol remains



Truffles – (unicellular)

- White truffles from Alba, Italy, sell at Market for \$4,000 a pound. A medium-size truffle costs approximately \$50



Symbiotic Relationship

- Lichen → combination of green algae or cyanobacteria and a sac fungus growing in a symbiotic arrangement
i.e. reindeer moss
- fungus provides CO₂ and water for photosynthesis and the plant provides sugars they manufacture with the fungi.
- 1st to establish themselves in an area → they can grow on rocks and create soil.

